

In the Claims:

1. (Currently amended) A storage management service system, comprising:  
a storage on demand (SoD) center system;  
a storage subsystem including a plurality of storage devices and a plurality of I/O  
ports; and  
a host computer coupled to-said storage subsystem and to said SoD center system;  
wherein  
said SoD center system is remote from the host computer and the storage  
subsystem;

said SoD center system receives input of an SoD demand, said SoD demand  
including a request to specify a storage resource, sends said demand to said storage subsystem to  
manage usability of the storage resource, and is capable of managing accessibility of the storage  
resource by the host computer; and ~~wherein~~

said storage subsystem receives said demand, makes said storage resource usable,  
and sends a management result to the SoD center system.

2. (Previously presented) The system of claim 1, wherein if said request  
includes an I/O path setting to be updated, said SoD center system sends an I/O path setting  
request to said host computer; and wherein said host computer requests an operating system to  
update an I/O path setting based upon said I/O path setting request, receives an update result  
from said operating system, and sends a setting result to said SoD center system.

3. (Previously presented) The system of claim 1, wherein said host computer  
and said storage subsystem are coupled by physical and logical connections between at least one  
of a plurality of host I/O controllers and at least one of a plurality of subsystem I/O ports.

4. (Previously presented) The system of claim 1, wherein said host computer  
and said storage subsystem are coupled by a network switch between at least one of a plurality of  
host I/O controllers and at least one of a plurality of subsystem I/O ports.

5. (Original) The system of claim 4, wherein said network switch comprises a fibre channel network switch.

6. (Currently amended) A storage apparatus comprising:  
memory;  
a plurality of storage devices;  
a plurality of I/O ports providing an interface to said plurality of storage devices;  
a device management store, in which a status of said plurality of storage devices is stored, and an I/O port management store, in which a status of said plurality of I/O ports is stored; and  
a storage resource management processor; wherein  
said storage management processor receives a demand for storage resources, the demand specifying one of said storage devices, updates said device management store to manage usability of one of the storage devices and said I/O port management store to manage accessibility of the one storage device by a user machine, and sends a management result responsive to said demand; ~~and wherein~~  
updates to at least one of a plurality of paths connecting to storage resources allocated from at least one of said plurality of storage devices are automatically defined to an operating system of said user ~~a user machine~~; and  
said storage resource management processor is remote from said plurality of storage devices and from said user machine.

7. (Previously presented) The apparatus of claim 6, said plurality of storage devices comprising at least one of a magnetic disk, an optical disk, a magnetic-optical disk, and semiconductor memory.

8. (Original) The apparatus of claim 6, further comprising a communications interface to a network, said storage management processor receiving said demand for storage resources over said network.

9. (Original) The apparatus of claim 6, further comprising a fibre channel switch, said fibre channel switch providing capability to connect to at least one of a plurality of host computers.

10. (Currently amended) A method for configuring a host to access resources in a storage subsystem, said host, said storage subsystem, and a center system being remote from each other and interconnected by a communication network, said method comprising:

receiving at said host an I/O path setting request from said center system, said I/O path setting request specifying a path to a resource in said storage subsystem allocated for use by said host;

requesting an operating system resident in said host to update an I/O path setting based upon said I/O path setting request;

receiving an update result from said operating system; and

sending a setting result to said center system based upon said update result,  
thereby enabling the center system to manage accessibility of the resource by the host.

11. (Previously presented) The method of claim 10, wherein updating said I/O path setting comprises: storing an indication that a particular I/O port in said storage subsystem is accessible to a particular host I/O controller.

12. (Previously presented) The method of claim 10, further comprising:  
receiving at said center system an input of a demand for storage resources;  
determining whether sufficient resources exist to meet said demand;  
sending said demand for storage resources to said storage subsystem, if sufficient resources were determined to exist;

receiving from said storage subsystem a management result, said management result indicating whether storage resources have been successfully allocated in accordance with said demand;

storing said management result;

determining whether said demand includes an I/O path setting request;

sending said I/O path setting request to said host, if said demand included an I/O path setting request;

receiving said setting result from said host; and

storing said setting result.

13. (Previously presented) The method of claim 12, further comprising:  
receiving said demand for storage resources at said storage subsystem;  
determining whether said demand includes a command to make at least one of a plurality of installed devices available;  
updating a device management store, if said demand includes a command to make at least one of a plurality of installed devices available;  
updating an I/O port management store; and  
sending a resource management result to said center system.

14. (Previously presented) The method of claim 13, wherein updating a device management store comprises: storing an indication that a particular device is usable.

15. (Previously presented) The method of claim 13, wherein updating a I/O port management store comprises: storing an indication that a particular I/O port is usable.

16. (Previously presented) The method of claim 13, further comprising:  
receiving at said storage subsystem an I/O command to access storage resources from said host;  
determining whether storage resources requested by said I/O command are usable;  
performing said I/O command, if said storage resources requested by said I/O command are usable, otherwise rejecting said I/O command; and  
sending an I/O result to said host.

17. (Previously presented) The method of claim 16, wherein determining whether storage resources requested by said I/O command are usable comprises:

searching said device management store to determine whether devices requested in said I/O command are usable.

18. (Previously presented) The method of claim 17, wherein determining whether storage resources requested by said I/O command are usable further comprises:

searching said I/O port management store to determine whether I/O ports requested in said I/O command are usable and whether devices requested in said I/O command are accessible via I/O ports requested in said I/O command.

19. (Currently amended) A computer program product for configuring a host to access resources in a storage subsystem, said host, said storage subsystem, and a center system being remote from each other and interconnected by a communication network, said computer program product comprising:

code that receives at said host an I/O path setting request from said center system, said I/O path setting request specifying a path to a resource in said storage subsystem allocated for use by said host;

code that requests an operating system resident in said host to update an I/O path setting based upon said I/O path setting request;

code that receives an update result from said operating system;

code that sends a setting result to said center system based upon said update result, the codes thereby enabling the center system to manage accessibility of the resource by the host; and

a computer readable storage medium for holding the codes.

20. (Previously presented) The computer program product of claim 19, further comprising:

code that receives at said center system an input of a demand for storage resources;

code that determines whether sufficient resources exist to meet said demand;

code that sends said demand for storage resources to said storage subsystem, if sufficient resources are determined to exist;

code that receives from said storage subsystem a management result, said management result indicating whether storage resources have been successfully allocated in accordance with said demand;

code that stores said management result;

code that determines whether said demand includes an I/O path setting request;

code that sends said I/O path setting request to said host, if said demand includes an I/O path setting request;

code that receives said setting result from said host; and

code that stores said setting result.

21. (Previously presented) The storage management system of claim 1, wherein said storage resource includes said storage devices.